

SAVs are the primary habitat for the bay scallop, and the bay scallop fishery is dependent on these SAVs for harvest. SAVs provide habitat for the life cycle of many other organisms and offer other important ecosystem functions such as structural complexity, sediment and shoreline stabilization, primary productivity and nutrient cycling.

There are numerous small fisheries that occur in North Carolina estuaries that utilize a dredge or a type of dredging gear. These fisheries include the hydraulic escalator dredge, the clam trawl, the oyster dredge and the scallop dredge. These dredge types are highly regulated using seasonal openings and closings that occur in certain areas of the state. Hydraulic escalator dredges as well as clam trawling “kicking” are allowed in certain areas that consist mostly of shallow sandy bottom areas. These areas are opened four days a week from December to March each year. Mechanical harvest of clams is not allowed in SAV beds. The oyster dredge, which consists of a metal framed basket weighing up to 100 lbs. with a toothed bar at the mouth, is managed in a similar manner in the northeastern portion of the state with the season occurring from November to March within specific areas based on criteria established in the Oyster FMP (DMF 2001).

The scallop dredge is used to harvest bay scallops from SAV beds found in North Carolina’s estuarine waters. These dredges consist of a wire or nylon bag attached to a metal frame. Unlike the oyster dredge, the scallop dredge has a toothless bar at the mouth and must not weigh more than 50 lbs. This dredge is designed to ride along the surface of the bottom and scoop up bay scallops (West et al. 1994; Street et al. 2005).

Impacts from dredging in SAV may result in shearing of blades, shearing of seed and flowers, uprooting, and burial. Turbidity, which may cause a reduction in light for photosynthesis is also a concern. Below ground impacts are of great concern and can result from dredging in SAV beds especially those that are heavy and have toothed bars. The resulting disturbances from heavy toothed dredges causes extensive damage to underground roots, rhizomes, and meristems and are essential for continued growth, nutrient uptake, and anchorage to the substrate (ASMFC 2000). In order to minimize these impacts to SAVs, scallop dredges are required to be toothless and lighter in weight (< 50 lbs) than oyster dredges.

In a study to assess the impacts of clam raking and mechanical harvest of clams in seagrass beds in Back Sound, North Carolina, Peterson et al. (1987) determined that removal of seagrass biomass was highly correlated with an associated decrease in scallop density. Hsiao et al. (1987) developed a simple open-access fishery model that also demonstrated that clam kicking and clam raking had significant negative effects on the bay scallop fishery from 1961 to 1976. However, there was no evidence to support negative effects from scallop dredging on the bay scallop fishery. Thayer and Stuart (1974) documented that scallop dredging reduced both bay scallop and eelgrass density in an area near Beaufort North Carolina.